

1.Component NAVY	FY 2005 MILITARY CONSTRUCTION PROGRAM			2.Date 13 JAN 2004
3. Installation and Location/UIC: N62285 (ANACOSTIA) U.S. NAVAL OBSERVATORY WASHINGTON, DISTRICT OF COLUMBIA			4. Project Title ATOMIC CLOCK FACILITY	
5.Program Element 0805376N	6.Category Code 61020	7. Project Number P050	8. Project Cost (\$000) 3,239	
9. COST ESTIMATES				
Item	UM	Quantity	Unit Cost	Cost(\$000)
ATOMIC CLOCK FACILITY (5,016 SF)	m2	466		2210
ATOMIC CLOCK VAULT FACILITY (5,016 SF)	m2	466	3,986.81	(1860)
RADIO FREQUENCY SHIELDING	LS			(40)
SPECIAL CONSTRUCTION CONSIDERATIONS	LS			(10)
BUILT-IN EQUIPMENT	LS			(240)
TECHNICAL OPERATING MANUALS	LS			(20)
INFORMATION SYSTEMS	LS			(20)
ANTI-TERRORISM/FORCE PROTECTION	LS			(20)
SUPPORTING FACILITIES				600
SPECIAL CONSTRUCTION FEATURES	LS			(60)
ELECTRICAL UTILITIES	LS			(220)
MECHANICAL UTILITIES	LS			(40)
PAVING AND SITE IMPROVEMENTS	LS			(120)
DEMOLITION	LS			(160)
SUBTOTAL				2810
CONTINGENCY (5%)				140
TOTAL CONTRACT COST				2950
SIOH (6%)				180
SUBTOTAL				3130
DESIGN/BUILD - DESIGN COST				110
TOTAL REQUEST ROUNDED				3240
TOTAL REQUEST				3239
EQUIPMENT FROM OTHER APPROPRIATIONS (NON ADD)				(1800)
10. Description of Proposed Construction				
<p>New construction of a single story industrial style vault facility with reinforced concrete foundation, slabs and wall systems with exterior insulation finish system, isolation pads to control vibration, sloped metal roof system, dual redundant mechanical and electrical systems, emergency generator, gas-based fire suppression system, utilities, anti-terrorism/force protection, paving, site improvements, and landscaping.</p> <p>Built-in equipment includes an energy monitoring and control system, intrusion detection system, raised access flooring, fire protection system and uninterruptible power supply. Information systems include telephone and data wiring ducts and fiber optic connectivity to the time dissemination facility. Special construction considerations include extra time required to move construction equipment and personnel on and off the site due to high security requirements. Special construction features include a retaining wall that is built into a hillside, oil storage tanks and deep rooted vibration isolation concrete slabs. Anti-terrorism/force protection features are included.</p>				

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<p>Demolish buildings 6,7,27,28,29,30 and 55, which will no longer be needed after the completion of this project. These buildings total 323 square meters. Sustainable principles will be integrated into the design, development, and construction of the project in accordance with Executive Order 13123 and other laws and Executive Orders.</p>				
<p><b>11. Requirement:</b> <u>466m2</u>      <b>Adequate:</b> <u>0m2</u>      <b>Substandard:</b> <u>0m2</u></p> <p><b>PROJECT:</b> Construct an atomic clock vault facility at the U.S. Naval Observatory to provide the controlled environment for state-of-the-art Cesium fountain clocks developed to meet operational requirements for continuous operations, which will improve the means of distributing precise time to Department of Defense (DOD) components worldwide. <b>(Current Mission)</b></p> <p><b>REQUIREMENT:</b> An adequate, efficiently configured building is required to provide a secure and controlled laboratory environment to house clock equipment and instruments.</p> <p>The U.S. Naval Observatory (USNO) is currently scheduled to complete a working prototype of the Rubidium fountain clock by early FY2005. The prototype clock will be located in the Building 52 laboratory, but the environment (temperature, humidity and vibrations) is not stable enough to support the operational clocks.</p> <p>Geopositional accuracy is currently limited by our ability to determine the positions of the satellites, which is dependent upon synchronization of the satellites' clocks and orbits. By 2006, the Global Positioning System (GPS) IIR satellites will be in operation. These satellites will have improved clocks that will be able to take advantage of the improved accuracy of the time provided by the USNO's fountain clocks. USNO will not complete the operational fountain clocks until the clock vault is ready. Without this project, USNO will not be able to provide the improved time accuracy allowing the GPS IIR satellites to provide improved geopositional accuracy, leading to improved surveillance, weapons delivery, communications, navigation and guidance systems.</p> <p><b>CURRENT SITUATION:</b> DOD Master Clock and the related vault functions are currently housed in Building 78, constructed in 1962 as an administrative office facility. Lack of adequate space, poor temperature and humidity control, inadequate ventilation and air-conditioning systems, and the proximity to a helicopter pad exposes the existing facility to excessive vibrations which significantly impacts the required controlled environment.</p> <p><b>IMPACT IF NOT PROVIDED:</b></p>				

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<p>This project supports the master positioning, navigation, and timing standards for all Department of Defense (DOD) operations. Deferral of this project will result in the continued usage of the existing facility to perform essential operations within cramped and uncontrolled environmental conditions. Continued use of this facility will limit DOD's capabilities to take advantage of future clock development, future communication, navigation, targeting and intelligence gathering activities.</p>																																																					
<p><b>12. Supplemental Data:</b></p> <p>A. Estimated Design Data:</p> <table style="width: 100%; border: none;"> <tr><td colspan="2">1. Status:</td></tr> <tr><td>(A) Date Design Start</td><td style="text-align: right;">082002</td></tr> <tr><td>(B) Date Design 35% Complete</td><td style="text-align: right;">092004</td></tr> <tr><td>(C) Date Design Completed</td><td style="text-align: right;">042005</td></tr> <tr><td>(D) Percent Completed as of   SEPTEMBER 2004</td><td style="text-align: right;">3%</td></tr> <tr><td>(E) Percent Completed as of   JANUARY     2005</td><td style="text-align: right;">3%</td></tr> <tr><td>(F) Type of Design Contract</td><td style="text-align: right;">Design Build</td></tr> <tr><td>(G) Parametric Estimate used to develop cost</td><td style="text-align: right;">Yes</td></tr> <tr><td>(H) Energy study/Life cycle analysis performed</td><td style="text-align: right;">Yes</td></tr> <tr><td colspan="2">2. Basis:</td></tr> <tr><td>(A) Standard or Definitive Design:</td><td style="text-align: right;">No</td></tr> <tr><td>(B) Where Design Was Most Recently Used:</td><td style="text-align: right;">N/A</td></tr> <tr><td>3. Total Cost (C) = (A) + (B) = (D) + (E) :</td><td style="text-align: right;">\$240</td></tr> <tr><td>(A) Production of Plans and Specifications</td><td style="text-align: right;">\$200</td></tr> <tr><td>(B) All other Design Costs</td><td style="text-align: right;">\$40</td></tr> <tr><td>(C) Total</td><td style="text-align: right;">\$240</td></tr> <tr><td>(D) Contract</td><td style="text-align: right;">\$40</td></tr> <tr><td>(E) In-House</td><td style="text-align: right;">\$200</td></tr> <tr><td>4. Contract Award</td><td style="text-align: right;">012005</td></tr> <tr><td>5. Construction Start</td><td style="text-align: right;">042005</td></tr> <tr><td>6. Construction Complete</td><td style="text-align: right;">042006</td></tr> </table> <p>B. Equipment associated with this project which will be provided from other appropriations:</p> <table style="width: 100%; border: none; margin-top: 20px;"> <thead> <tr> <th style="text-align: left;"><u>Equipment</u> <u>Nomenclature</u></th> <th style="text-align: center;"><u>Procuring</u> <u>Appropriation</u></th> <th style="text-align: center;"><u>Fiscal Year</u> <u>Appropriated</u> <u>Or Requested</u></th> <th style="text-align: right;"><u>Cost</u> <u>(\$000)</u></th> </tr> </thead> <tbody> <tr> <td>Atomic Clock</td> <td style="text-align: center;">OPN</td> <td style="text-align: center;">2005</td> <td style="text-align: right;">400</td> </tr> </tbody> </table>				1. Status:		(A) Date Design Start	082002	(B) Date Design 35% Complete	092004	(C) Date Design Completed	042005	(D) Percent Completed as of   SEPTEMBER 2004	3%	(E) Percent Completed as of   JANUARY     2005	3%	(F) Type of Design Contract	Design Build	(G) Parametric Estimate used to develop cost	Yes	(H) Energy study/Life cycle analysis performed	Yes	2. Basis:		(A) Standard or Definitive Design:	No	(B) Where Design Was Most Recently Used:	N/A	3. Total Cost (C) = (A) + (B) = (D) + (E) :	\$240	(A) Production of Plans and Specifications	\$200	(B) All other Design Costs	\$40	(C) Total	\$240	(D) Contract	\$40	(E) In-House	\$200	4. Contract Award	012005	5. Construction Start	042005	6. Construction Complete	042006	<u>Equipment</u> <u>Nomenclature</u>	<u>Procuring</u> <u>Appropriation</u>	<u>Fiscal Year</u> <u>Appropriated</u> <u>Or Requested</u>	<u>Cost</u> <u>(\$000)</u>	Atomic Clock	OPN	2005	400
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<p>Atomic CLock OMN 2005 500</p> <p>Atomic CLock OPN 2006 400</p> <p>Atomic CLock OMN 2006 500</p> <p>JOINT USE CERTIFICATION:</p> <p>The Regional Commander certifies that this project has been considered for joint use potential. Unilateral Construction is recommended. This project supports the master positioning, navigation, and timing standards for all DOD operations, but the facility is being designed for and will be operated by Navy personnel.</p> <p>Activity POC: Charles Kane Phone No: 202 762-1472</p>			